L11 ANSWER 1 OF 8 USPATFULL on STN
AN 1998:1990 USPATFULL
TI Integrated process for producing diisopropyl ether, an isopropyl tertiary alkyl ether and isopropyl alcohol
IN Frey, Stanley J., Palatine, IL, United States
Schmidt, Robert J., Barrington, IL, United States
Marker, Terry L., Warrenville, IL, United States
Marinangeli, Richard E., Arlington Heights, IL, United States
PA UOP, Des Plaines, IL, United States (U.S. corporation)
PI US 5705712 19980106
AI US 1995-539394 19951005 (8)
DT Utility
FS Granted
EXNAM Primary Examiner: Cintins, Marianne M.; Assistant Examiner: Jones, Dwayne C.
LREP McBride, Thomas K., Snyder, Eugene I., Maas, Maryann
CLMN Number of Claims: 14
ECL Exemplary Claim: 1
DRWN 2 Drawing Figure(s); 2 Drawing Page(s)
LN.CNT 630
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB A highly integrated process for concurrently producing diisopropyl ether and an isopropyl tertiary alkyl ether has been developed. Optionally, high purity isopropyl alcohol may also be collected as a product. In a first reactor, propylene and water are reacted to form isopropyl alcohol, a portion of which is further reacted to form diisopropyl ether. After removing unreacted propylene, the effluent of the first reactor is separated into an ether rich **stream**, a water rich **stream** and an alcohol rich **stream**. The alcohol rich **stream** is dried to provide dry isopropyl alcohol. A portion of the dry isopropyl alcohol may be removed and collected as a product. A portion of the dry isopropyl alcohol and isobutylene, isoamylene or a mixture thereof are reacted to form an isopropyl tertiary alkyl ether in a second reactor. Unreacted iso-olefins and inert compounds are then removed from the second reactor effluent. A mixture of the effluent from the second reactor and the ether rich and the water rich **streams** separated from the first reactor are water washed to produce a mixed ethers product **stream** and an aqueous isopropyl alcohol recycle **stream**. The isopropyl tertiary alkyl ether is collected along with the diisopropyl ether in the mixed ethers product **stream** from the water wash. A modified flowscheme of the process is also discussed.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L11 ANSWER 2 OF 8 USPATFULL on STN
AN 97:107294 USPATFULL
TI Integrated process for producing diisopropyl ether and an isopropyl tertiary alkyl ether
IN Frey, Stanley J., Palatine, IL, United States
Schmidt, Robert J., Barrington, IL, United States
Marker, Terry L., Warrenville, IL, United States
Marinangeli, Richard E., Arlington Heights, IL, United States
PA UOP, Des Plaines, IL, United States (U.S. corporation)
PI US 5689014 19971118
AI US 1995-539577 19951005 (8)
DT Utility
FS Granted
EXNAM Primary Examiner: Cintins, Marianne M.; Assistant Examiner: Jones, Dwayne C.
LREP McBride, Thomas K., Snyder, Eugene I., Maas, Maryann
CLMN Number of Claims: 14
ECL Exemplary Claim: 1

DRWN 1 Drawing Figure(s); 1 Drawing Page(s)
LN.CNT 534
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB A highly integrated process for concurrently producing diisopropyl ether and an isopropyl tertiary alkyl ether has been developed. In a first reactor, propylene and water are reacted to form isopropyl alcohol, a portion of which is further reacted to form diisopropyl ether. After removing unreacted propylene, the effluent of the first reactor is separated into an ether rich **stream**, a water rich **stream** and an alcohol rich **stream**. The alcohol rich **stream** and isobutylene, isoamylene or a mixture thereof are reacted to form an isopropyl tertiary alkyl ether in a second reactor. The water present in the alcohol rich **stream** also reacts with the iso-olefin to form tertiary alcohol. The effluent from the second reactor is water washed to produce an oxygenate product **stream** and an aqueous alcohol recycle **stream**. Some tertiary alcohol is recycled to the first reactor where it is reacted with propylene to form additional isopropyl tertiary alkyl ether. The isopropyl tertiary alkyl ether and some tertiary alcohol is collected along with the diisopropyl ether in the mixed oxygenate product **stream** from the water wash.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L11 ANSWER 3 OF 8 USPATFULL on STN
AN 97:78233 USPATFULL
TI Process for producing slippery, tenaciously adhering hydrogel coatings containing a polyurethane-urea polymer hydrogel commingled with a poly (n-vinylpyrrolidone) polymer hydrogel
IN Hostettler, Fritz, Lambertville, NJ, United States
Rhum, David, New York, NY, United States
Forman, Michael R., Ramsey, CA, United States
Helmus, Michael N., St. Louis Park, MN, United States
Ding, Ni, Plymouth, MN, United States
PA Schneider (USA) Inc., Plymouth, MN, United States (U.S. corporation)
PI US 5662960 19970902
AI US 1995-384711 19950201 (8)
DT Utility
FS Granted
EXNAM Primary Examiner: Dudash, Diana
LREP Richardson, Peter C., Akers, Lawrence C., Jaeger, Howard R.
CLMN Number of Claims: 80
ECL Exemplary Claim: 1
DRWN No Drawings
LN.CNT 3423
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB A process for preparing coating compositions of a commingled hydrogel of a polyurethane-polyurea polymer hydrogel and a poly(N-vinylpyrrolidone) polymer hydrogel; a process for making materials composed of a polymeric plastic or rubber substrate or a metallic substrate, with a coating of the commingled hydrogel thereon; and a process for making medical devices with a coating of the commingled hydrogel thereon, are disclosed. The coating compositions tenaciously adhere to the substrate materials and medical devices to which they are applied due to bonding of a tie coat to a reactive substrate surface and due to the commingling of the two hydrogel components. The coating compositions and coated materials and medical devices are non-toxic and biocompatible, making them ideally suited for use in applications such as for catheters, catheter balloons and stents. In such applications, the coating compositions, coated materials, and coated medical devices made therefrom demonstrate low coefficients of friction in contact with body fluids, especially blood, as well as a high degree of wear permanence over prolonged use. The commingled hydrogel coatings are capable of being dried to facilitate storage of the devices to which they have been

applied, and can be instantly reactivated for later use by exposure to water.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L11 ANSWER 4 OF 8 USPATFULL on STN
AN 94:55683 USPATFULL
TI Integrated process for producing diisopropyl ether from isopropyl alcohol
IN Marker, Terry L., Warrenville, IL, United States
Kempf, Laura E., Deerfield, IL, United States
PA UOP, Des Plaines, IL, United States (U.S. corporation)
PI US 5324866 19940628
AI US 1993-36008 19930323 (8)
DT Utility
FS Granted
EXNAM Primary Examiner: Mars, Howard T.
LREP McBride, Thomas K., Spears, Jr., John F., Taylor, Reginald K.
CLMN Number of Claims: 16
ECL Exemplary Claim: 1
DRWN 1 Drawing Figure(s); 1 Drawing Page(s)
LN.CNT 587
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB The present invention is an integrated isopropyl alcohol (IPA) and diisopropyl ether (DIPE) process. In this process, IPA, substantially free of DIPE, is formed in a hydration reactor by reacting an olefinic feedstock with water in a hydration reactor. The effluent from the hydration reactor is then contacted in a first separation unit with DIPE which was made in an etherification reactor. The resulting mixture is then passed to a second separation unit to separate the IPA from the DIPE product. The IPA is then fed to the etherification reactor to produce DIPE.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L11 ANSWER 5 OF 8 USPATFULL on STN
AN 94:55682 USPATFULL
TI Di-isopropyl ether production
IN Beech, Jr., James H., Wilmington, DE, United States
Miller, Douglas, Yardley, PA, United States
Soto, Jorge L., Cranbury, NJ, United States
Stoos, James A., Blackwood, NJ, United States
Wu, Albert H., Medford, NJ, United States
PA Mobil Oil Corporation, Fairfax, VA, United States (U.S. corporation)
PI US 5324865 19940628
AI US 1993-20964 19930222 (8)
DT Utility
FS Granted
EXNAM Primary Examiner: Mars, Howard T.
LREP McKillop, Alexander J., Keen, Malcolm D., Wise, L. Gene
CLMN Number of Claims: 14
ECL Exemplary Claim: 1
DRWN 2 Drawing Figure(s); 2 Drawing Page(s)
LN.CNT 753
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB A process for production of diisopropyl ether by conversion of hydrocarbon feedstock containing propene, propane and C.sub.2 - light gas components, including the steps of: optionally, prefractionating fresh feedstock containing propene, propane and C.sub.2 - light gas components to provide a reactor feedstream rich in propene; contacting the feedstock and water in a **catalytic** reactor with acidic **catalyst** under olefin hydration and etherification conditions; and recovering from the **catalytic** reactor a liquid reactor effluent **stream** containing diisopropyl ether, isopropanol, water, unreacted propene, propane and C.sub.2 - light gas components. Improved operation is achieved by separating the liquid effluent **stream** in a vertical stripper **column**; recovering an overhead vapor **stream** containing propene, propane and C.sub.2 - light gas components from the stripper **column**; cooling the overhead vapor **stream** to provide a reflux **stream** rich in condensed propene and propane; removing the C.sub.2 - light gas components from condensed; recycling the reflux **stream** to an upper contact portion of the stripper **column**; and recovering a predominantly C3 recycle **stream** from the upper contact portion of the stripper **column**. Optionally, the C3 recycle **stream** may be passed to the to the prefractioning step for propene enrichment with fresh feedstock.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L11 ANSWER 6 OF 8 USPATFULL on STN
AN 93:102927 USPATFULL
TI Process of preparing an isopropanol and diisopropyl ether oxgenate motor fuel additive
IN Irvine, Robert L., Overland Park, KS, United States
PA The Pritchard Corporation, Overland Park, KS, United States (U.S. corporation)
PI US 5268515 19931207
AI US 1993-24525 19930301 (8)
RLI Continuation-in-part of Ser. No. US 1992-877642, filed on 1 May 1992, now patented, Pat. No. US 5191129
DT Utility
FS Granted
EXNAM Primary Examiner: Lone, Werren B.
LREP Hovey, Williams, Timmons & Collins
CLMN Number of Claims: 14
ECL Exemplary Claim: 1
DRWN 7 Drawing Figure(s); 7 Drawing Page(s)

LN.CNT 1993
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB Propene is reacted with water in a multi-stage, fluidized bed **catalytic** reactor to produce an oxygenate motor fuel additive containing a major proportion of isopropanol, a minor proportion of diisopropyl ether, and some water. The molar ratio of water to propene introduced into each **catalytic** stage of the multi-stage reactor is maintained within a range of from about 2:1 to about 6:1. The temperature of the reactants in each of the **catalytic** stages is maintained within a range of from about 250° F. to about 320° F. and the pressure at a level of from about 1200 psia to about 3600 psia. The temperature in each **catalytic** stage increases from the initial **catalytic** stage to the final **catalytic** stage with the temperature increase being limited to a value within a range of from about 8° F. to about 1° F. The pressure of the final stage of the **catalytic** section is controlled so that the reaction product containing the organic constituents including oxygenates provides a concentrated, less dense liquid **stream** which may be easily separated from the aqueous liquid phase in the final stage. The liquid phase is recycled to the **catalytic** zone while underacted propene is separated from the oxygenates. Some water is purposefully retained in the oxygenate to take advantage of the solubilization of the IPA component. Seasonal gasoline component specifications may be met by simply controlling the amount of water allowed to remain in the oxygenate product.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L11 ANSWER 7 OF 8 USPATFULL on STN
AN 93:16845 USPATFULL
TI Method of preparing an isopropanol and diisopropyl ether oxygenate motor fuel additive
IN Irvine, Robert L., Overland Park, KS, United States
PA The Pritchard Corporation, Overland Park, KS, United States (U.S. corporation)
PI US 5191129 19930302
AI US 1992-877642 19920501 (7)
DT Utility
FS Granted
EXNAM Primary Examiner: Lone, Werren B.
LREP Hovey, Williams, Timmons & Collins
CLMN Number of Claims: 22
ECL Exemplary Claim: 1
DRWN 3 Drawing Figure(s); 3 Drawing Page(s)
LN.CNT 1245
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB Propene is reacted with water in a multi-stage, fluidized bed **catalytic** reactor to produce an oxygenate motor fuel additive containing a major proportion of isopropanol (IPA), some diisopropyl ether (IPE) and some water. The molar ratio of water to propene introduced into each **catalytic** stage of the multi-stage reactor is maintained within a range of from about 2:1 to about 6:1. The temperature of the reactants in each of the **catalytic** stages is maintained within a range of from about 250° F. to about 300° F. and the pressure at a level of from about 1200 psia to about 3000 psia. The temperature in each **catalytic** stage increases from the initial **catalytic** stage to the final **catalytic** stage with the temperature increase being limited to a value within a range of from about 8° F. to about 2° F. The pressure of the final stage of the **catalytic** section is controlled so that the reaction product containing the organic constituents including oxygenates provides a concentrated, less dense liquid **stream** which may be easily separated from the aqueous liquid phase in the final stage. The liquid phase is recycled to the

catalytic zone while unreacted propene is separated from the oxygenates. Some water is purposefully retained in the oxygenate to take advantage of the solubilization of the IPA component. Seasonal gasoline component specifications may be met by simply controlling the amount of water allowed to remain in the oxygenate product. Relatively small **distillation** towers are suitable in the present process because of the 92% conversion factor of the propene entering. Thus, only about 1/3rd of the quantity of unconverted hydrocarbons must be separated in the present process as compared with existing commercial methods for the same yield of motor fuel oxygenates.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L11 ANSWER 8 OF 8 USPATFULL on STN
AN 88:50083 USPATFULL
TI Isopropyl alcohol purification process
IN Litzen, David B., Houston, TX, United States
Bolger, Stephen R., La Porte, TX, United States
PA Shell Oil Company, Houston, TX, United States (U.S. corporation)
PI US 4762616 19880809
AI US 1986-943356 19861219 (6)
DT Utility
FS Granted
EXNAM Primary Examiner: Spear, Frank
LREP Lemuth, Richard F.
CLMN Number of Claims: 9
ECL Exemplary Claim: 1
DRWN 1 Drawing Figure(s); 1 Drawing Page(s)
LN.CNT 476
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB A process for the purification of the crude isopropyl alcohol product of propylene hydration reactions. Crude isopropyl alcohol products, which comprise isopropyl alcohol, diisopropyl ether and polymeric impurities, are subjected to a specified sequence of multiple dilution and phase separation steps which serve to extract a substantial portion of the product's diisopropyl ether and polymeric impurities. The invention is particularly useful in removing odiferous sulfur-containing impurities from the products of indirect propylene hydration processes which involve the reaction of propylene with sulfuric acid to produce isopropyl sulfate followed by **hydrolysis** of the sulfate to isopropyl alcohol.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L13 ANSWER 6 OF 7 USPATFULL on STN
AN 97:49823 USPATFULL
TI Isopropyl alcohol and diispropyl ether production from crude by-product acetone in one step
IN Taylor, Jr., Robert J., Port Arthur, TX, United States
Dai, Pei-Shing E., Port Arthur, TX, United States
Knifton, John F., Austin, TX, United States
Martin, Bobby R., Beaumont, TX, United States
PA Texaco Chemical Inc., White Plains, NY, United States (U.S. corporation)
PI US 5637778 19970610
AI US 1994-287451 19940808 (8)
DT Utility
FS Granted
EXNAM Primary Examiner: Dees, Jose'G.; Assistant Examiner: Williams, Rosalynd A.
LREP Bailey, James L., Priem, Kenneth R., Hunter, Cynthia L.
CLMN Number of Claims: 17
ECL Exemplary Claim: 1
DRWN 1 Drawing Figure(s); 1 Drawing Page(s)
LN.CNT 786
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB Disclosed is a one-step method for synthesis of methyl tertiary butyl ether, diisopropyl ether and isopropyl ether from crude streams containing acetone, methanol and t-butyl alcohol which comprises reacting an acetone-rich feed over a bifunctional **catalyst** comprising 5-45% by weight of a **catalyst** consisting essentially of a hydrogenation **catalyst** selected from the group consisting of one or more metals selected from the group consisting of IB, VIB or VIII of the Periodic Table and a heteropoly acid on a 55%-95% of the total weight of the **catalyst** of a support comprising a compound selected from the group consisting of:

a. a metal phosphate;

b. 5 to 95% by weight metal phosphate supported on 95 to 5 wt % Group III or IV oxide; and

c. a large pore silicoaluminophosphate.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

(FILE 'HOME' ENTERED AT 18:57:41 ON 10 MAY 2004)

FILE 'REGISTRY' ENTERED AT 18:58:01 ON 10 MAY 2004

L1 1 S DIISOPROPYL ETHER/CN
L2 1 S ISOPROPANOL/CN

FILE 'CAPLUS, USPATFULL, CA, CAOLD' ENTERED AT 18:59:10 ON 10 MAY 2004

L3 7387 S L1
L4 2103 S L1 AND L2
L5 274 S L4 AND DISTILL?
L6 145 S L5 AND CATALY?
L7 37 S L6 AND HYDROLY?
L8 15 S L7 AND COLUMN
L9 8 S L8 AND RESIN
L10 8 DUP REM L9 (0 DUPLICATES REMOVED)
L11 8 S L10 AND STREAM
L12 7 S L8 NOT L11
L13 7 DUP REM L12 (0 DUPLICATES REMOVED)